

S
6/4
H2BDPH
Y19#4

Montana State Library



3 0864 1006 5623 3

Helena PUL

Montana State Library

STATE OF MONTANA

BULLETIN

OF THE

Department of Public Health

Entered as second-class matter July 10, 1914, at the Post Office at Helena, Montana, under the Act of August 24, 1912.

Vol. 9.

August 15, 1915

No. 4.

MONTANA STATE BOARD OF HEALTH.

D. J. DONOHUE, M. D., President.

W. J. BUTLER, D. V. S., Vice President.

HON. S. V. STEWART, Governor.

HON. J. B. POINDEXTER, Attorney General.

E. F. MAGINN, M. D.

S. A. COONEY, M. D.

W. F. COGSWELL, M. D., Secretary.

EMIL STARZ, Ph. D.

W. M. COBLEIGH,

State Bacteriologist,

Chemist.

ALLAN TUFFORD.

F. C. SNOW, C. E.,

Consulting Architect.

Consulting Sanitary Engineer.

HELENA, MONTANA.

Published Monthly at Helena, by the State Board of Health.
"The science of disease prevention, if properly applied, can add fifteen years to the present average length of human life."—Prof. Irving Fisher, Yale.

This Bulletin will be mailed monthly to any person in Montana upon request mailed to the Secretary of the State Board of Health at Helena.

INDEPENDENT PUBLISHING CO.
HELENA, MONTANA



SPOTTED FEVER.

Below is a revised and completed list of spotted fever cases which have been reported in Montana for the season just ended, and the list of Counties in which these cases occurred. With the exception of the cases which occurred in the Bitter Root Valley, the disease was of the Idaho type. Although this type is much milder than that of the Bitter Root, there were two deaths reported.

Big Horn	1
Carbon	3
Custer	8
Cascade	1*
Dawson	6
Fallon	2
Gallatin	2
Missoula	4
Ravalli	3**
Rosebud	5

Deaths were as follows:

Big Horn	1
Fallon	1
Missoula	3
Ravalli	2

*The case in Cascade County was imported from Idaho.

**One of the cases reported from Ravalli County was also imported from Idaho.

ETIOLOGY OF ROCKY MOUNTAIN SPOTTED FEVER.

(Synopsis of paper read at the meeting of health officers of the State of Montana by Surgeon L. D. Ricks, U. S. P. H. S.)

Previous to 1902 snow water and saw dust were supposed by many to be etiological factors in the production of Rocky Mountain spotted fever; in that year the State Board of Health of Montana started an investigation of the disease by Drs. Wilson and Chowning, who shortly pronounced it a pyroplasmosis in conjunction with, and perhaps somewhat dependant upon their theory of tick transmission of the disease.

The idea that spotted fever was caused by a pyroplasm was viewed, at that time, with considerable favor, because

of their known association with tick transmitted diseases; but further investigations have failed to confirm the belief that Rocky Mountain spotted fever, though a tick transmitted disease, can be included in the group of pyroplasmoses.

In 1904 Stiles showed conclusively that the disease could not be placed in this group and no one since that time has made further claim that it should be so placed.

In his comprehensive investigations, begun in 1906, Ricketts soon showed that spotted fever infection is caused by a living virus, which circulates freely in the blood; and the following experiments were made by him in order to determine whether the virus is of vegetable or animal origin:

(1) It is impossible to free the blood cells from the virus by ten or twelve washings, although repeated washings decrease their virulence.

(2) A point is reached after ten washings where the virus is not given off in infective quantities.

(3) Blood serum contains the virus, and prolonged centrifugation does not alter it.

(4) The virus will not pass through an ordinary Berkfeld filter.

(5) The virus is not killed at 45 but is killed in from 25 to 30 minutes at 50 degrees C.

Ricketts also showed the intimate relation which exists between the virus and the tick host. Ticks once infected remain so until their death, and in many instances transmit the infection through their eggs to the next generation of ticks.

None of these findings, however, point definitely to a vegetable or animal organism as the cause of spotted fever. Other facts which appear to be more pertinent have been determined by the various spotted fever workers.

One attack of Rocky Mountain spotted fever, either in human beings or experimental animals, confers a decided immunity of long duration. So far as our present knowledge goes, this one observation points with considerable emphasis to a vegetable organism as the cause of the disease.

In fact many workers have observed in infected blood small diplococcoid bodies of short bacillary forms, which although extremely rare may have something to do with the etiology of the disease.

Ricketts first described a small bacillus found in infected tick eggs; but he afterwards found a similar organism in non-infected eggs.

The recent work of Plotz in growing the bacillus of typhus fever, if he has done so, is of the greatest importance to us in the study of this disease. Dr. Plotz has not yet published a report of his work, so far as I am aware. But the two diseases resemble each other so closely clinically that it appears as if we are justified in expecting that there should be a close relationship in their etiology.

Considerable time has been spent, at the field laboratory established at Victor, Montana, during the present season in attempts to grow the virus of Rocky Mountain spotted fever; and while complete success cannot be reported, it is believed that some progress has been made. In my opinion, there is every reason to believe that the virus of spotted fever will be cultivated, and with its cultivation there will be made without doubt, a great advance in the therapy of the disease.

SOPHISTICATION AND CONTAMINATION OF FOOD PRODUCTS.

By Dr. Herman Betz,

Chief of the Division of Food and Drug Inspection, Bureau of Food and Drugs, Department of Health, City of New York.

Part I.

Sophistication of food products, or the debasing of the purity of food by adulteration, and thereby the defrauding of the consumer, causes not only financial loss, but endangers the health, inducing discomfort, loss of productive ability, deprives of the benefits to be derived from good food, lowers vitality; thus possibly shortening life and increasing the death rate.

It has been held by some courts, and certain authorities high in educational councils, that food inspection is not necessary to any great extent for the reason that no person will eat a decayed apple, or a wormy fruit, which must obviously be conceded as being a matter of common sense.

It is not in such ways, however, that the public health is endangered, for the reason that the appearance of decayed and deleterious material is usually sufficiently repulsive to prevent its consumption. The danger lies in the fact that unwholesome material may be presented for consumption in a form which is not the ordinary one with which the consumer is familiar, nor a form which is met with every day, but one which is manufactured or treated in a manner which makes it impossible for the consumer to pass upon its wholesomeness. Especially is this true of the forms of prepared or partly prepared food products which have come upon the market of late years, and which are backed by extensive, attractive, and seemingly convincing advertising in the daily press and magazines. These preparations, while possessing food value, are, in many cases, so attenuated as to make them most expensive or not at all desirable as constant foods. In the process of making them either attractive to the eye or in the form easily prepared for the table, some valuable constituents are abstracted, while unsupported claims are made that the consumer is particularly benefited.

This sophistication is accomplished, principally, in two ways, which might be termed:

- (A) The direct method of adulteration.
- (B) The indirect method of sophistication.

These methods may be described as follows:

The Direct Method of Adulteration.

By adding any substance or substances to the foodstuff which reduces or lowers, or injuriously affects, its quality or strength, as, for instance, the addition of water to milk.

By substituting an inferior or a cheaper substance, wholly or in part, for the foodstuff, as, for instance, the substitution of saccharin for sugar.

By the abstraction of any valuable constituent, wholly or in part, from the foodstuff, as, for instance, the removal of cream from milk.

By the coloring of foodstuff in such a manner as to make it appear to be made of better material than it really is, as, for instance, the addition of coal tar dyes to candies, to make them appear as if quantities of fruit had been added to give them the vivid colors they possess.

By the coating of a foodstuff with an inert substance and making it appear much better than it really is, as, for instance, the coating of cheap chocolate candies with shellac, to make them appear to be made of better material.

By the polishing of food products with a view of concealing damage or inferior character, as, for instance, the polishing of rice, to make it appear as if it were of a better quality, and concealing damage to the kernel.

By the dusting with powder of a food product, to make it appear better than it really is, as, for instance, cuts of meat which darken when stored for a shorter or longer time in an ice-box, are dusted with calcium sulphite to make them appear fresh and red looking, and to conceal their age.

By adding a poisonous ingredient to a food product, and thereby rendering such an article injurious to health, as, for instance, the mixing of calcium sulphite with chopped meat, to make the same appear fresh and red and to conceal the inferior quality of meats used.

By the addition of an antiseptic or preservative, which is not evident to the purchaser or consumer, as, for instance, the addition of boric acid to broken-cut or liquid eggs in order to conceal their inferior unsound condition and prevent further decomposition.

By the addition of inert mineral substances, like talc, to food products, such as confectionery, which are deleterious or detrimental to health.

By the addition of deleterious ingredients to wine or spirituous liquors, for the purpose of concealing the low percentage of alcohol, as, for instance, salicylic acid to wines.

By the addition of substances or ingredients to malt and spirituous liquors, which, when used as beverages, are detrimental to health, such as the addition of wood alcohol to spirituous liquors.

The Indirect Method of Sophistication.

Selling a food product under the distinctive name of another article, as in the case of cider vinegar when ordinary distilled vinegar or diluted acetic acid is labeled and sold under the name of "apple cider vinegar." While no great harm to health may be caused by such a practice, it is sophistication, nevertheless.

The labeling, branding or marking of any food product in a manner misleading to the purchaser or consumer, as, for instance, the placing of a label reading "Champagne" upon a domestic carbonated wine.

Sophistication is practiced if a label on a food product is so worded, or if a picture appears on the label, so as to give the impression that the contents of the package is a foreign product when it is not, as the depiction of an Italian landscape on a label of a box of macaroni, with a view of producing the impression that the article was made in Italy when it was not.

The removing of the contents of a package of labeled foodstuffs, and replacing the same with other contents not exactly similar, as, for instance, the refilling of bottles with beverages of other but similar make, leaving, however, the original label.

If a package of food material containing drugs whose sale is especially regulated by law bears no label or statement regarding the nature and quantity of the same.

Sophistication is practiced if food material is sold in packages or unit forms without plainly stating the correct amount of the contents on the outside of the package.

Sophistication, also, includes the labeling of food products with labels, which may also bear designs or devices relating to the contents, which are false or misleading in any way.

Sophistication is practiced if articles of food are labeled, branded, or tagged as "Compound," "Imitation," or "Blend," unless the product is really what it is stated to be.

There are a number of individual sophistications practiced in the various food trades, which are, however, too numerous to mention in a limited discussion of this kind. The instances given above, under the two principal heads, are the ones usually found and looked for, and are generally included in the restrictions laid down by the various law-making powers. The public itself is frequently the originator, either from tradition or convenience, and perpetrator of sophistication. For instance, in all parts of this country "Soda Water" is called for, but carbonated water, sweetened and flavored is meant; no soda water whatever is used in its

production. Very few people allow their consciences to be troubled by such a misstatement, however.

Food Contamination.

By introducing bacterial and filthy animal or vegetable matter into food products by careless or unclean handling of the material in production, packing, or shipping of food products, such as the milking of cows with unclean hands, from manure spattered udders, into soiled utensils, the use of improperly washed cans, and the filling of non-sterilized bottles with pasteurized milk.

The exposure of food products to dust, dirt, and flies, and unwarranted human handling, thereby causing contamination with infectious diseases.

The employment of men and women, in the preparation of food products, who are afflicted with infectious, communicable diseases, thereby causing the spread of disease.

Allowing food products to become contaminated by animals, vermin, and insects carrying diseases, as, for instance, dogs and cats as carriers of skin and intestinal diseases, and rats as carriers of the plague germ.

Important Articles Affected.

It is manifestly impossible to give in a limited treatise all, or even nearly all, the many adulterations which are practiced. There ought, however, to be mentioned the more conspicuous sophistications, or rather the food material which is most often subjected to such treatment; likewise is it of importance to mention the adulterants which are used for that purpose.

Water.

Water is not strictly a food, yet life could not be maintained without it. A large percentage of the animal body is water, and assimilation, or even the ingestion of foodstuffs, is impossible without its aid. Water is frequently contaminated with harmful mineral and animal matter. The use of such water in, or with foodstuffs, is dangerous to health and an adulteration.

Water should not contain an excessive amount of chlorides nor any albuminates. Their presence would indicate contamination with sewage, manure, urine, etc. Water should not contain any colon bacilli nor streptocci, nor bacteria,

the presence of which would indicate pollution with sewage or animal discharges.

Polluted water should not be used in the making of bread, manufacture of carbonated or table waters. Natural mineral waters are sometimes polluted by insanitary surroundings. Water from wells, cisterns, springs, etc., is frequently polluted by leaking in of sewage from stables and dwellings.

Milk and Cream.

Appended to this paper will be found a table giving the approximate amounts of the principal foodstuffs consumed in a city of 4,500,000 inhabitants. This table includes seventeen items. The largest quantity given is that of milk, of which approximately 1,368,630,000 pounds are consumed yearly by a population of the number given. The great importance of milk is, therefore, apparent.

Milk is adulterated and fraudulently affected:

By the addition of water, thereby reducing the percentage of all valuable ingredients.

By skimming or removing cream, wholly or in part, thereby abstracting one of the most valuable constituents, the butter fat.

By both skimming and watering, which is a double fraud.

By milking of cows too close to, or too soon after, calving, thereby making the milk unwholesome.

By drawing milk from cows which have been fed upon improper or unwholesome food.

By using milk from cows which are kept under insanitary conditions.

If milk is produced under insanitary conditions, either by unclean hands, in milking from manure bespattered udders, or collected, kept, held, or shipped in unclean receptacles, or if not properly cooled after milking, or if not kept at a proper temperature, in and after shipment, an unusually large number of bacteria are developed.

If milk is drawn from cows who are not in a healthy condition, but suffer from diseases, such as tuberculosis, foot-and-mouth disease, actinomycosis, etc.

If milk has been produced in violation of any municipal, state, or national law.

If milk is not properly labeled, so as to indicate the proper grade or the proper source; or any other violation of laws and regulations relating to the handling, shipping and dealing in milk.

Meat and Meat-Food Products.

Meat as sold in shops, in the shape of cuts, chops, or similar forms, cut directly from the various parts of the animal carcass, does not lend itself well to sophistication, except when meat is sold from an animal which has not been properly slaughtered or bled, or if the animal was not healthy, sound, and in good condition when slaughtered, possibly suffering from one of the animal diseases, such as tuberculosis, foot-and-mouth disease, actinomycosis, hog cholera, trichinosis, skin disease, or the after-effects of diseases like pneumonia, septicaemia, anthrax, sheep scabies, etc.

The principal frauds in prepared meats, such as salted, brined, spiced, chopped, stuffed in casings, etc., are as follows:

The use of meat which is not fresh and sound, and, therefore, in more or less of a decayed condition.

The use of hams which may have become sour along the bone.

The sale of sausages stuffed in artificially colored casings, containing, sometimes, excessive amounts of cereals and water, and, in place of being properly wood-smoked, which have been dipped in so-called liquid--smoke or pyrolygenecous acid.

The sale of poultry in a condition of partial decay from improper icing in shipping, or from keeping at high temperatures in stores, thus becoming sour and unwholesome; or if not properly slaughtered and bled; or if death resulted from disease.

Fish.

Fish are fraudulently sold if they are not in a fresh condition, or partial decay has set in; if they are allowed to become stale by long keeping under temperatures not sufficiently low. Sophistication is practiced in canned fish like salmon, a cheaper quality being sold for a higher grade, or if gas has developed from decomposition and swelled the

can, by reprocessing the same—allowing the gas to escape and recooking the contents.

Oysters.

Selling oysters from polluted waters, or “floating” or “drinking” them in water polluted with sewage.

Canned Goods.

It is doubtful whether there is any other line of manufactured goods that offers so vast a field for sophistication as does the canning industry, certainly none in the line of food products.

From the very start of canning, certain manufacturers cheated in weights and measures, as no standard for canned goods existed, and as there was no compulsion to state the weights or measures on the packages until the Pure Food and Drug Act was enforced for interstaate commerce, and laws to the same effect were passed for intrastate traffic.

The below stated frauds, sophistications, etc., exist even at the present time:

Containers do not state the quantity enclosed, a so-called “pound” can may contain anywhere from 8 to 16 ounces.

Excessive amounts of water are added, far beyond the quantity necessary to cover the food material contained in the cans, in cases of vegetables, fruits, etc.

Unripe or decayed fruits and vegetables are sometimes used, especially where the food material is split, chopped, or pulped, as in the case of tomato pulp. Great quantities of bacteria are thereby introduced into the foodstuffs.

The wording and general appearance of the label may give the impression that fresh vegetables have been used when in fact dried and soaked vegetables have been employed; or as in apples, both pared and peeled, when the contents consist of soaked dried apples. Copper salts are added to vegetables to color them green in order to warrant such a statement on the label.

Vegetables, fruits, etc., are often packed improperly, either through fault in the packing or preparation of the food product itself, or through faults in the material of which the can is made, or through improper closing, or leaks, the contents decompose; gases are formed which press upon the

sides, top and bottom (principally the latter two) to such an extent as to bulge them. Such goods are then known under the technical name of "swelled" goods, and are unfit for consumption.

Misrepresentation by label consists in claims for the contents of packages which are not true, in cases like maple syrup consist of corn syrup and flavor; honey consisting of glucose and artificial comb; jams and jellies being claimed as genuine fruit products when they are only imitations of same, principally of corn syrup artificially flavored.

Flavoring Extracts.

Flavoring extracts are largely imitated, genuine oils being substituted by other extracted oils, as the use of coumarine, vanilliu, and vanilla flavors in place of vanilla beans.

Eggs.

Eggs in the shell, having been in storage, are sold for fresh eggs, and eggs having developed spots containing large quantities of bacteria are broken out and sold to bakers as freshly broken-out eggs. Eggs broken out from the shell, and frozen, are mixed with boric acid, formaldehyde and other preservatives, and sold as fresh broken-out eggs for baking purposes. Dried or desicated eggs, prepared under insanitary conditions, are sold, containing large numbers of bacteria.

Butter.

The sophistications in butter are, the admixture of excessive amounts of water, melting of so-called "farmers" butter, which contains many different lots and kinds of butter, and producing so-called "ladle" butter, and selling same to consumers without properly marking it; the admixture of oleomargarine with sweet or "ladle" butter and selling it for fresh butter.

Flour.

Bleaching flour is claimed to be injurious to health, but authorities have not yet definitely so decided. Ordinary wheat flour is sold to consumers as gluten flour. Gypsum has been found in flour, having been introduced into same through cream of tartar baking powder, which was adulterated with it.

Coffee.

Coffee is often mixed, when roasted and ground, with chicory, and, while chicory is not injurious to health, when it is not stated on the label it is a fraud. Large quantities of ordinary Rio and other cheap coffees are sold as Mocha and Java at much higher prices than warranted.

Candies and Confectionery.

These are frequently colored and dyed with coal tar dyes, so as to give them a pleasing and attractive appearance. Hard candies are made from glucose with the addition of sulphurous acid to make them firm and brittle. A soft cheap chocolate coating is frequently reinforced with a coating of shellac, which in itself, may have been adulterated with arsenic ores. Cocoa shells are ground and used in place of chocolate.

Non-Alcoholic Beverages.

These are frequently adulterated by replacing sugar with saccharin, thereby robbing such beverages of all food value.

Means of Prevention of Sophistication and Fraud in Food Products.

That means should have been taken to prevent fraud in the manufacture, distribution and sale of food products, soon after the practice became known, stands to reason. Legislation in three forms has been applied:

- (A) National.
- (B) State.
- (C) Municipal.

The national law, most effective in preventing fraud, is the so-called Food and Drug Act, which went into effect on June 30, 1906, and is enforced by the Secretary of Agriculture, through notification of an existing violation to the U. S. District Attorney for the district in which the trial is to take place. The standards proposed by the U. S. Government have greatly helped in proving violations, and have helped in effective prosecutions. As the Food and Drug Act is applicable to interstate commerce only, intrastate protection devolves upon state and municipal authorities.

State legislation is effective to provide proper laws for prevention of frauds in food material and products. Such acts passed are usually enforced by the state boards of health, or the state department of agriculture.

Municipal rules and regulations are the most direct way of reaching manufacturers and dealers in fraudulent food products. These municipal ordinances usually take the form of sanitary codes, which, in many cases, cover the subject very thoroughly. Boards of health are usually charged by the legislature with the enforcement of the provisions of the sanitary code. Some boards of health have power to act directly, but most are usually assisted by corporation counsels or district attorneys.

The Educational Method.

The forcible, or police method of dealing with violators of food laws has been recognized to be necessary and efficient when dealing with hardened offenders, where nothing but the severest measures are practicable. There is, however, a more modern method of enforcing food regulations which relies upon the enlightenment, intelligence and honesty of the producers.

There is no question in the minds of those familiar with this subject that a fine is not the best way in which to make a violator see his fault. Be he right or wrong, he feels embittered and would rather impede than forward the work of an administration that has so treated him.

But, if the manufacturer or dealer could be made to see the error of his way through instructive and educational efforts, and the gain to himself and the public—for himself financially, and for the public in health—which would result from co-operation with the health authorities, much would be gained.

The food inspector would also profit by such a method, for it is well known that some men, in the kindness of their hearts, frequently find it repulsive to their conscience to testify against their fellow men in technical cases. If, therefore, a food inspector could approach manufactures and dealers in a friendly way and convince them that if they, of their own account, would comply with existing laws, this factor would be eliminated. By winning over trade associations and trade papers, which are most always only too willing to try better

or newer ways, much could be accomplished towards a better understanding and improved conditions.

Means of Control.

Without fear of contradiction, it can be stated that the chief means of control of the sophistication and fraud practiced in food products, is frequent, thorough, and competent inspection, and, in order to accomplish this, it is believed that the arrangements detailed below will give good results:

Inspectors and Inspections.

The number of inspectors of food should be large enough to make it possible for them to visit retail stores sufficiently often to let the retail trade feel that their premises may be inspected at any moment. Wholesale places should be visited more frequently, as with them the movement of food products is quick and the quantity large. Manufacturers should be visited still more often. If the quantity of food products manufactured is small, frequent visits alone will be a sufficient control. Should the manufacturing of food materials be carried on on a very large scale, however, an inspector should be stationed permanently, for the reason that large quantities of doubtful raw material could be quickly used up. In any case, one inspector should have not more than two large factories to inspect.

Inspections of all food premises should be very thorough. Score cards with duplicate copy for the owner of the premises offer a good means of record. Under all conditions, the Food Bureau should have a complete record of all varieties of goods manufactured and a complete list of the raw materials employed.

Food inspectors, after having passed the civil service examinations required, should be fully instructed as to the extent, variety, and importance of their duties. If it is found that a certain inspector has good initiative capabilities, they should be developed, and he be given a chance to show his ability.

“LET’S SAVE THE KIDDIES.”

The last words accredited to Vanderbilt when he was face to face with death on the Lusitania were spoken to his valet: “Come, let’s save the kiddies.”

The words were simple and casual and the impulse was that of humanity. They were more than the words of a dying man; they are the feeling of this living age.

“Let’s save the kiddies” did not originate with Vanderbilt on the heaving deck of the shattered Lusitania. It is the thought of this generation of Americans. Vanderbilt had absorbed it, perhaps he had helped to nurture it; and when the supreme moment came his heart spoke that supreme message.

The movements toward reforms affecting young children have multiplied during the past few years to a degree hardly realized by the unthinking.

The agitation for pure milk, for public playgrounds, for the prohibition of child labor, for the control of contagious diseases, for the training of mothers in elementary hygiene, for the regulation of traffic on public thoroughfares, for the improvement of conditions in cheap homes, for inspection by physicians and nurses in the schools, is all only another way of expressing the sentiment of the age—“Come, let’s save the kiddies.”

Vanderbilt voiced in his death only what every good man and woman feel at the foundation of their lives.—Hillsdale Daily.

LABORATORY REPORT.
Summary of Samples Analyzed.

	Legal	Illegal	Unofficial	Total
Ice Cream—				
Strawberry	3	4		7
Vanilla	17	8	1	25
Neopolitan		1		1
Caromel	1			1
Ice Cream (Dairy Commission)				
Chocolate			1	1
Vanilla			5	5
Hamburger		2	7	9
Milk	3	2		5
Cream	2			2
Vinegar	1			1
Beer			1	1
Water				91
Total	27	17	14	149

Ninety-one samples of water have been examined in the chemical and bacteriological laboratories. The samples were shipped from the following cities and towns: Big Sandy, Billings, Bozeman, Butte, Chinook, Chester, Danvers, Glasgow, Glendive, Gardiner, Great Falls, Livingston, Mildred, Mondak, Medicine Lake, Miles City, Plentywood, Paola, Poplar, Roundup, Roy, Sweet Grass and Zurich.

Fifty-three of the samples of water analyzed were pronounced suspicious from the sanitary aspect and recommendations made accordingly.

Thirty-eight of the samples of water analyzed were found to be satisfactory.

Thirty-four samples of ice cream were examined in the laboratory. Of these, seven were strawberry, twenty-five were vanilla, one Neopolitan and one caramel. Of the total number examined, twenty-one were found to comply with the standard while thirteen went below.

Six samples of ice cream were sent in by the Dairy Commission. Of these, five were vanilla and one chocolate.

These are classified in the report as "Unofficial," because the samples were too small and also too badly soured for analysis for official purposes.

Nine samples of hamburger were submitted to the laboratory for analysis. Two of these samples contained sulphite and the remaining seven arrived at the laboratory in such a decomposed condition that they could not be analyzed for official purposes and are classified in the report as "Unofficial."

Five samples of milk were sent in for analysis. Three of these samples complied with the standard, while the other two fell below in butter fat.

Two samples of cream were submitted for analysis. Both complied with the standard.

One sample of vinegar was sent in for the acidity test. This sample complied with the standard.

One sample of beer was submitted for analysis. This is classified in the report as an unofficial sample.

THE QUERY DEPARTMENT.

Two correspondents wrote to a country editor to know, respectively, "The best way of assisting twins through the teething period," and "How to rid an orchard of grasshoppers."

The editor answered both questions faithfully, but unfortunately got the names mixed, so that the fond father was thunderstruck by the following advice:

"If you are unfortunate enough to be plagued by these little pests the quickest means of settling them is to cover them with straw and set the straw on fire."

The man bothered with grasshoppers was equally amazed to read:

"The best method of treatment is to give them each a warm bath twice a day and rub their gums with boneset." —Practical Druggist.

SAFE ON FIRST.

Mother (looking through magazine) : Darling, I see from statistics given here that every third baby born in the world is a Chinese.

Father (fondling his first born) : Then thank God this is our first.—Everybody's.

**COMMUNICABLE DISEASES REPORTED TO THE STATE
BOARD OF HEALTH FOR THE MONTH OF JULY, 1915.**

Smallpox—Beaverhead, 1; Broadwater, 3; Gallatin (Excl. of Bozeman), 1; Granite, 4; Helena, 4; Meagher, 1; Livingston, 1; Powell, 6; Ravalli, 1; Silver Bow* (Excl. of Butte), 6; Butte, 7. Total, 35. Total last month, 26.

Diphtheria—Dawson, 1; Hill, 1; Helena, 1; Madison, 1; Richland, 1; Stillwater, 1; Yellowstone (Excl. of Billings) 3; Total, 9. Total last month, 14.

Scarlet Fever—Bozeman, 4; Missoula County, 1; Richland, 2; Rosebud, 2; Sheridan, 7; Valley, 1; Yellowstone (Excl. of Billings), 1; Total, 18. Total last month, 34.

Typhoid Fever—Beaverhead, 2; Blaine, 1; Cascade (Excl. of Great Falls), 2; Great Falls, 3; Dawson, 1; Hill, 2; Sanders, 1; Sheridan, 4; Stillwater, 3; Yellowstone (Excl. of Billings), 2; Billings, 1. Total, 22. Total last month, 31.

Measles—Chouteau, 2; Dawson, 1; Fallon, 2; Kalispell, 2; Hill, 18; Helena, 2; Madison, 3; Mineral, 1; Missoula County, 3; Park (Excl. of Livingston), 1; Sheridan, 7; Silver Bow ((Excl. of Butte), 2; Butte, 6; Sweet Grass, 1; Billings, 3. Total, 54. Total last month, 69.

C. S. Meningitis—Sweet Grass, 1. Total, 1. Total last month, 1.

Spotted (Tick) Fever—Custer, 1. Total, 1. Total last month, 5.

Tuberculosis—Cascade (Excl. of Great Falls), 1; Custer, 1; Flathead (Excl. of Kalispell), 1; Kalispell, 1; Ravalli, 1; Rosebud, 1; Sheridan, 1; Sweet Grass, 1; Billings, 1; Total, 9. Total last month, 20.

Whooping Cough—Blaine, 6; Meagher, 2; Sheridan, 1; Total, 9. Total last month, 24.

Anterior Poliomyelitis—None reported. Last month, 0.

Trachoma—Sheridan, 1. Total, 1. Total last month, 3.

Chickenpox—Sheridan, 4. Total, 4. Total last month, 13.

*Five of the cases of smallpox reported from Silver Bow County are city cases confined at the pest house.

BIRTHS (EXCL. OF STILLBIRTHS) REPORTED TO THE STATE BOARD
OF HEALTH FOR THE MONTH OF JULY, 1915, AND COMPARA-
TIVE BIRTH AND DEATH RATE IN THE STATE.

	Excess of Deaths	Excess of Births	Totals	Deaths	Excess of Deaths	Excess of Births	Totals	Deaths	Excess of Deaths	Excess of Births	Totals
Beaverhead	5	7	12	6	6	1	7	1	6	1	15
Big Horn	1	1	2	1	1	1	2	1	1	1	3
Blaine	9	4	13	4	9	9	18	9	9	9	38
Broadwater	4	5	9	4	4	4	8	4	4	4	17
Carbon	21	21	42	4	4	4	8	3	3	3	12
Cascade Excl. of	4	5	9	5	5	5	10	4	4	4	17
Great Falls	37	22	59	17	17	17	34	7	7	7	34
Chouteau	10	14	24	7	7	7	14	6	6	6	14
Custer	10	8	18	6	6	6	12	3	3	3	12
Dawson	6	7	13	3	3	3	10	3	3	3	10
Deer Lodge Excl. of	2	1	3	18	18	18	27	7	7	7	27
Anaconda	11	11	22	15	15	15	32	7	7	7	32
Fallon	3	1	4	1	1	1	5	3	3	3	5
Fergus	31	20	51	15	15	15	66	10	10	10	66
Flathead Excl. of	6	11	17	10	10	10	27	7	7	7	27
Kalispell	11	7	18	8	8	8	25	10	10	10	25
Gallatin Excl. of	13	8	21	3	3	3	30	18	18	18	30
Bozeman	11	7	18	8	8	8	27	10	10	10	27
Granite	1	1	1	1	1	1	3	1	1	1	3
Hill	16	32	48	9	9	9	57	1	1	1	57
Jefferson	3	2	5	4	4	4	11	1	1	1	11
Lewis and Clark Excl. of	13	2	15	5	5	5	23	10	10	10	23
Helena	14	19	33	16	16	16	65	17	17	17	65
Lincoln	7	6	13	4	4	4	20	9	9	9	20
Madison	5	3	8	5	5	5	18	5	5	5	18
Meagher	12	11	23	3	3	3	38	1	1	1	38
Mineral	3	1	3	1	1	1	5	1	1	1	5
Missoula Excl. of	8	8	16	4	4	4	28	12	12	12	28
Missoula City	9	14	23	6	6	6	42	12	12	12	42
Musselshell	11	14	25	7	7	7	47	18	18	18	47
Park Excl. of	3	4	7	3	3	3	13	4	4	4	13
Livingston	6	7	13	5	5	5	25	8	8	8	25
Phillips	13	11	24	1	1	1	35	11	11	11	35
Powell	5	7	12	1	1	1	23	2	2	2	23
Prairie	3	2	5	2	2	2	10	3	3	3	10
Ravalli	11	12	23	11	11	11	55	22	22	22	55
Richland	9	9	18	4	4	4	44	14	14	14	44
Rosebud	6	5	11	6	6	6	27	5	5	5	27
Sanders	7	3	10	6	6	6	29	4	4	4	29
Sheridan	22	19	41	2	2	2	73	23	23	23	73
Silver Bow Excl. of	19	20	39	16	16	16	65	23	23	23	65
Butte	33	48	81	51	51	51	163	30	30	30	163
Stillwater	10	7	17	4	4	4	41	13	13	13	41
Sweet Grass	1	6	7	5	5	5	18	2	2	2	18
Teton	17	16	33	8	8	8	58	25	25	25	58
Toole	1	3	4	3	3	3	10	1	1	1	10
Valley	6	8	14	1	1	1	23	13	13	13	23
Wibaux	2	1	3	1	1	1	6	3	3	3	6
Yellowstone Excl. of	20	9	29	3	3	3	61	26	26	26	61
Billings	27	17	44	7	7	7	91	37	37	37	91
Totals	518	484	1002	344	344	344	1846	683	683	683	1846

DEATHS (EXCL. OF STILLBIRTHS) REPORTED TO THE STATE BOARD
OF HEALTH FOR THE MONTH OF JULY, 1915, ARRANGED
ACCORDING TO COUNTIES AND PRINCIPAL CITIES.

	Totals.....	All Other Causes.....	Alcoholism.....	Suicide.....	Violence.....	Acute Intestinal Diseases.....	Malignant Tumors.....	Organic Heart Disease.....	Nephritis.....	Pneumonia.....	Whooping Cough.....	Anterior Poliomyelitis.....	Meningitis.....	Typhoid Fever.....	Measles.....	Scarlet Fever.....	Diphtheria.....	Tuberculosis.....	Small Pox.....	Spotted Fever.....
Beaverhead																				
Big Horn																				
Blaine																				
Broadwater																				
Carbon																				
Cascade Excl. of																				
Great Falls																				
Chouteau																				
Custer																				
Dawson																				
Deer Lodge Excl. of																				
Anaconda																				
Fallon																				
Fergus																				
Flathead Excl. of																				
Kalispell																				
Gallatin Excl. of																				
Bozeman																				
Granite																				
Hill																				
Jefferson																				
Lewis and Clark Excl. of																				
Helena																				
Lincoln																				
Madison																				
Meagher																				
Mineral																				
Missoula Excl. of																				
Missoula City																				
Musselshell																				
Park Excl. of																				
Livingston																				
Phillips																				
Powell																				
Prairie																				
Ravalli																				
Richland																				
Rosebud																				
Sanders																				
Sheridan																				
Silver Bow Excl. of																				
Butte																				
Stillwater																				
Sweet Grass																				
Teton																				
Toole																				
Valley																				
Wibaux																				
Yellowstone Excl. of																				
Billings																				
Totals	26	1	1	2	1	11	137	28	10	9	58	10	5	145	344					

Estimated population 420,000
Monthly Death Rate per 1,000 population819
Annual Death Rate per 1,000 population 9.82

